

CHAPTER IV

DEMOGRAPHIC ANALYSIS AND GROWTH ALTERNATIVES

Over the last decade, the Memphis MPO region has had consistent population and employment growth. As in many other growing metropolitan areas across the United States, officials in the counties and municipalities of the region are working to respond to the stresses and strains caused by shifting growth patterns.

In an effort to determine future travel demands to produce a comprehensive transportation plan for the Memphis Metropolitan area, the MPO examined existing census data and trends of where people live and work. Population, household and employment patterns are the basis for all analyses, projections, determination of growth alternatives and the selection of the alternative. Regional and community plans that have been adopted over the years were utilized to further support the data and conclusions of this plan. They were incorporated in the population and employment projections for the year 2026 presented in this section, along with input from planners, engineers and citizens of the local jurisdictions of the MPO.

A. Regional Framework

The MPO is responsible for transportation planning in Shelby County, Tennessee and portions of DeSoto County, Mississippi and Fayette County, Tennessee. **Figure 2, Memphis MPO and Adjacent Counties**, shows a map of the MPO region and adjacent counties in the Memphis Metropolitan Statistical Area (MSA).



Growth trends show a sizable population increase in DeSoto County and Tipton County and a moderate increase in Shelby County for the Memphis MSA between 1990 and 2000 (**Table 1, Memphis MSA Population: 1990, 2000 & 2010**). Tipton County, Tennessee and DeSoto County, Mississippi (including the part not in the MPO area) are the fastest growing counties in the region. According to the Census, between 1990 and 2000, Tipton County in Tennessee grew 36.5% while Desoto County in Mississippi grew 57.9%. With the continued loss of population in the central city of Memphis, growth in Shelby County has been concentrated in the outlying (suburban) areas as evident by positive changes for the 1990 and 2000 Censuses.

Population data pertaining to the counties outside the MSA over the past two decades illustrate those counties' essential roles in the region (**Table 2, Adjacent Counties**). Fayette County in Tennessee and Marshall, Tate and Tunica counties in Mississippi also had large growth percentages between 1990 and 2000. During the same time period, Shelby County grew 8.6%. Additionally, the City of Memphis population grew by 6.5% in 2000, principally through an aggressive annexation policy.

Table 1
Memphis MSA Population: 1990, 2000 & 2010

| COUNTY | 1990 | 2000 | 2010 | % CHG 1990-2010 |
|----------------|---------|---------|-----------|--------------------|
| Shelby, TN | 777,113 | 826,330 | 897,472 | 8.6% |
| Fayette, TN* | | | 28,806 | |
| Tipton, TN | 32,930 | 37,568 | 51,271 | 36.5% |
| Crittenden, AR | 49,499 | 49,939 | 50,866 | 1.9% |
| DeSoto, MS | 53,930 | 67,910 | 107,199 | 57.9% |
| TOTAL MSA | 913,472 | 981,747 | 1,135,614 | 15.7% |

Source: U. S. Census of Population, 1990, 2000 & 2010

* Fayette County was included in the MSA for the 2010 Census

Table 2
Adjacent Counties

| COUNTY | 1990 | 2000 | 2010 | % CHG |
|--------------|--------|--------|--------|-------|
| Fayette, TN* | 25,305 | 25,559 | 28,806 | 12.7% |
| Marshall, MS | 29,296 | 30,361 | 34,993 | 15.3% |
| Tate, MS | 20,119 | 21,432 | 25,370 | 18.4% |
| Tunica, MS | 9,652 | 8,164 | 9,227 | 13.0% |

Source: U. S. Census of Population, 1990, 2000 & 2010

In June of 2003, the U. S. Office of Management and Budget (OMB), added Marshall, Tate and Tunica counties in Mississippi to the MSA for the next decennial census. The OMB

reviews MSAs after each census and adds or deletes counties from those areas based on their social and economic integration with the central city. Shelby County, specifically Memphis, remains the employment anchor of the region. **Table 3, Work Mobility**, shows County-to-County commuting data for 2000. This table details the number of people who work in Shelby County and the county where they reside.

Table 3
Work Mobility

| County of Residence | Workers | Work in Shelby County | % Work in Shelby County |
|-----------------------|---------|-----------------------|-------------------------|
| Fayette County, TN | 12,783 | 7,825 | 61% |
| Shelby County, TN | 408,221 | 383,198 | 94% |
| Tipton County, TN | 23,280 | 12,220 | 52% |
| DeSoto County, MS | 53,773 | 27,938 | 52% |
| Marshall County, MS | 13,815 | 4,631 | 34% |
| Tate County, MS | 10,654 | 2,226 | 21% |
| Tunica County, MS | 23,280 | 201 | 6% |
| Crittenden County, AR | 20,561 | 6,757 | 33% |

Source: 2000 U.S. Census Bureau County -to- County Worker Flow Files

In 2000, 94% of employed residents of Shelby County worked in the county. Also working in Shelby County were 61% of Fayette County, TN workers; 52% of workers in both Tipton County, TN and DeSoto County, MS and 34% of Marshall County, MS workers. This data shows that workers from the counties that border Shelby County are contributing greatly to daily vehicle traffic in Shelby County.

2000 Census data also shows that 87% of employed residents of Tunica County work in Tunica County (only 6% worked in Shelby County). A 1999 report by the Bureau of Business and Economic Research at the University of Memphis, entitled “The Future of Casino Gaming in Tunica,” showed that already 15,000 people were employed in Tunica County. It also showed that between 1989 and 1998 total employment was continually climbing as the unemployment rate plummeted. Tunica County’s continued growth in population and employment must be considered as the Memphis MPO plans for its future.

In addition to the population and employment trends, the land development patterns of the region were analyzed. Development in the outlying areas of Shelby County has been along major transportation corridors and where sewer lines are accessible. As shown in **Figure 3, the Memphis MPO Major Highway Network**, the city of Lakeland and town of Arlington are bisected by Interstate 40 while Highways 70 and 64 run through them to the north and

south respectively. Poplar Avenue (Highway 72) is the major corridor through Germantown and Collierville, and Millington is developed around Highway 51.

Tennessee Highway 385, when complete, will serve as an outer loop through Shelby County, providing access to the outlying municipalities. Currently the northern section of Highway 385 (Paul Barrett Parkway) and the southern portion of Highway 385 (Bill Morris Parkway) are complete. Paul Barrett Parkway begins in Millington and ties into I-40 in Arlington. Bill Morris Parkway extends from the southeastern section of the I-240 loop through southeastern Shelby County and terminates in Collierville at US Highway 72. The final portion of Highway 385 will connect these two completed sections by running in a north-south direction from Collierville to Arlington.

The outlying municipalities (Arlington, Bartlett, Collierville, Germantown, Lakeland and Millington) were once situated in rural Shelby County and were separated from the city of Memphis by stretches of undeveloped land. As the corridors connecting them to Memphis expanded and sewer service was extended, development along those corridors began to occur at a very fast pace. This fast-paced development has created a very large low-density metro area with a declining population inside the I-240 loop.

Figure 4, Memphis MSA Urban Area Expansion, delineates the urbanized areas of the Memphis region showing the expansion from the 1990 Memphis Urban Area to the 2000 urbanized area. The most notable expansion is along U.S. Highway 51 both to the north and south of Memphis.

Population, employment and land development trends show the need for further review of the MPO planning area. The 2026 population and employment projections reflect the present growth plans of the region. Growth will be the greatest in the outlying areas of the MPO and probably outside of the MPO boundaries. Based on comprehensive reviews of more detailed commuting patterns and demographic and economic data available in 2004, the Memphis Area MPO may be forced to consider recommending the expansion of the MPO planning area to account for growth and development on the outer fringe of the current MPO area. Areas that may be considered based on these trends include: DeSoto, Marshall, Tunica, and Tate Counties in Mississippi and Tipton and Fayette Counties in Tennessee.

B. Regional and Community Plans

In the past decade, several regional and community plans have been adopted that assisted the MPO in its long-range transportation planning process. In 1998, the Tennessee General Assembly adopted legislation requiring all counties in the State to prepare growth plans. This act, *TCA 1101*, resulted in growth plans being prepared and adopted in both Shelby County and Fayette County. Both of these growth plans have clear definitions of where growth will occur. DeSoto County is currently in the process of adopting its comprehensive plan. In addition to descriptions of these county plans, brief synopses are provided below of other plans that shaped the 2026 LRTP planning process.

Figure 3
Memphis MPO Major Highway Network

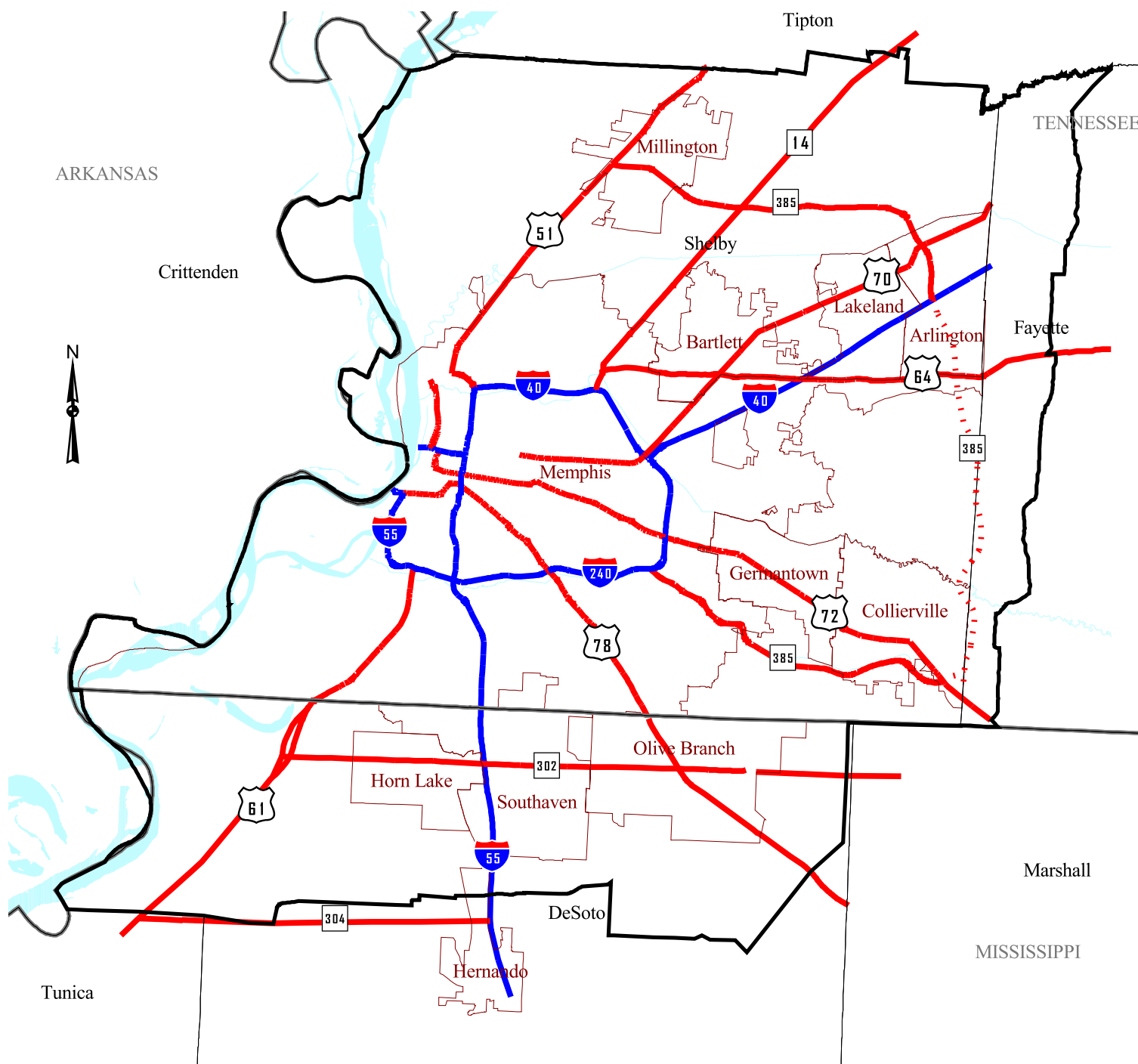
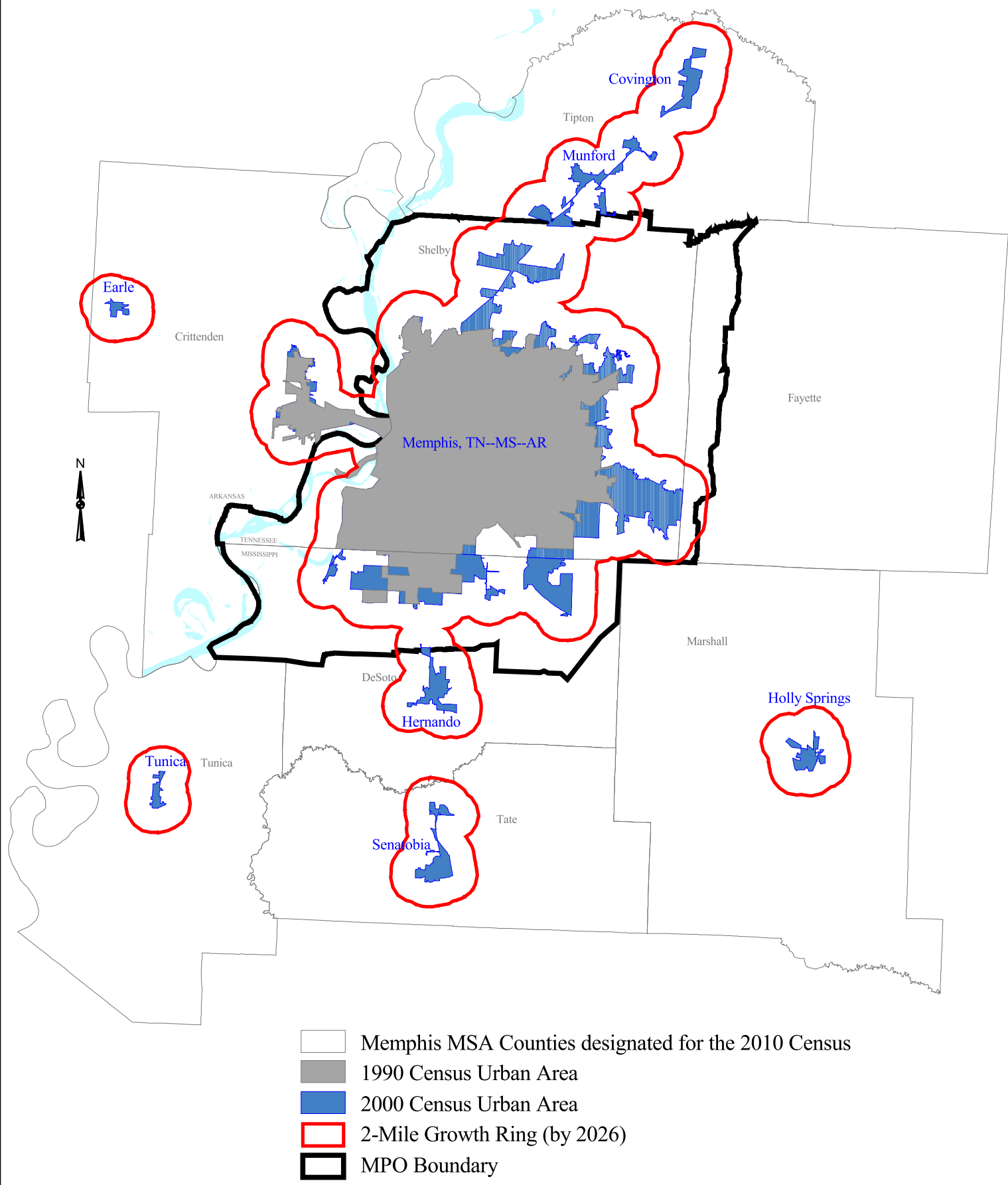


Figure 4
Memphis MSA Urban Area Expansions



1. *Shelby County Growth Plan*

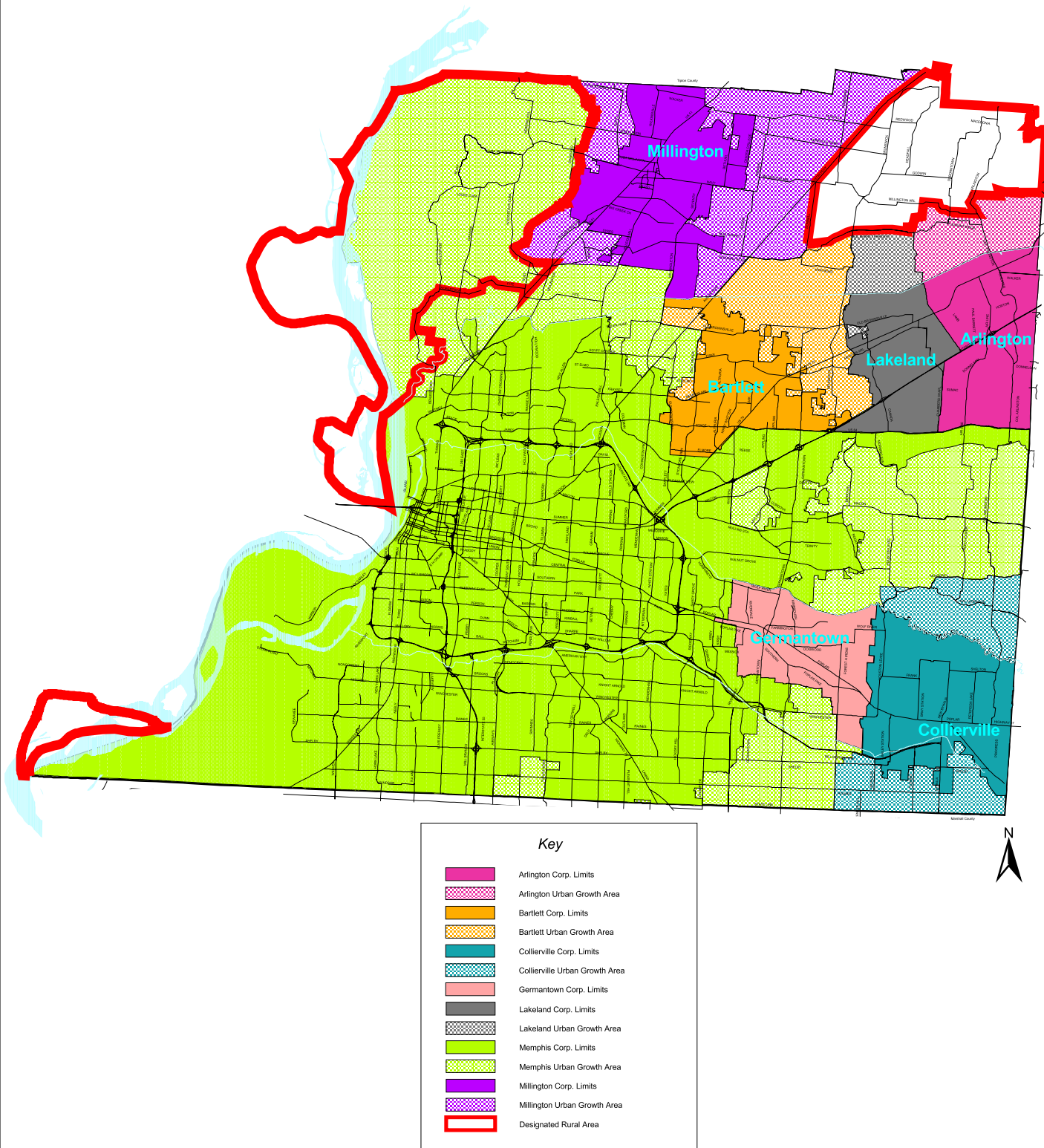
The *Shelby County Growth Plan*, available for review at www.dpdgov.com, identifies urban growth areas and municipal responsibilities for these areas, as required by TCA 1101. The growth plan based its future population projections on the MPO LRTP for 2020 as well as on additional input from various municipalities. Each of the seven municipalities was allocated an area termed “annexation reserve area”. These territories were mutually agreed upon by all entities and documented in a memorandum of understanding. With the exception of a portion of the City of Memphis reserve area located in the northwest quadrant of the county, all annexation reserve areas were determined to be “urban growth areas” and are expected to urbanize in the next 20 years.

Two significant areas of the county were designated as rural – a large area north of the Arlington and Lakeland reserve areas in the northeast quadrant of the county (not included in a reserve area) and the aforementioned northwest quadrant which surrounds Shelby Forest and is adjacent to Millington’s reserve area. These areas are not expected to encounter urban activity during the term of the 2026 LRTP.

The Shelby County Growth Plan utilized the adopted policies of the LRTP for major roads and transit as a basis for much of its assumptions for future growth. The plan states that by 2020 the majority of Shelby County will be urbanized because of adopted policies relating to extensions of sewer lines and major roads. The plan also notes that the highest residential densities (based on building permits and Shelby County Assessor’s data) will occur in the east central, southern and southeastern portions of the Memphis annexation reserve area.

Outside of the Memphis annexation area, the areas south of Germantown and Collierville and north of Bartlett, Arlington and Lakeland, were identified as high growth areas. However, the growth plan also emphasizes aggressive programs aimed at the revitalization of housing, commercial and industrial properties within the City of Memphis. **Figure 5, the Shelby County Growth Plan Map**, illustrates the urban growth and rural areas as designated in the Shelby County Growth Plan.

Figure 5
Shelby County Growth Plan



December 22, 1999, Updated with new Memphis Annexation of Countrywood/Eads, Hillshire, and Southeast Area, January 2003
Rural Area amended in 2003 by consent Decree

2. Fayette County Growth Plan

The *Fayette County Growth Plan* was adopted in August 2003. The towns of Piperton and Gallaway and a portion of a Fayette County Planned Growth Area (old Hickory Withe) are within the planning area of the MPO. The *Growth Plan* seeks to direct future development to the existing towns first and secondarily to the growth area. Gallaway currently provides sewer service and Piperton will provide sewer service in the near future. The plan seeks to minimize low-density, costly development. **Figure 6, Fayette County Growth Plan**, details the Fayette County urban growth boundaries of the plan. In the MPO portion of Fayette County, future development north of Macon Road is projected to take place at suburban levels. South of Macon Road, in the vicinity of the town of Piperton, more compact urban level development similar to that of adjacent Collierville in Shelby County is anticipated. This growth in Fayette County is projected to begin principally in the latter part of the current decade.

3. DeSoto County Comprehensive Plan

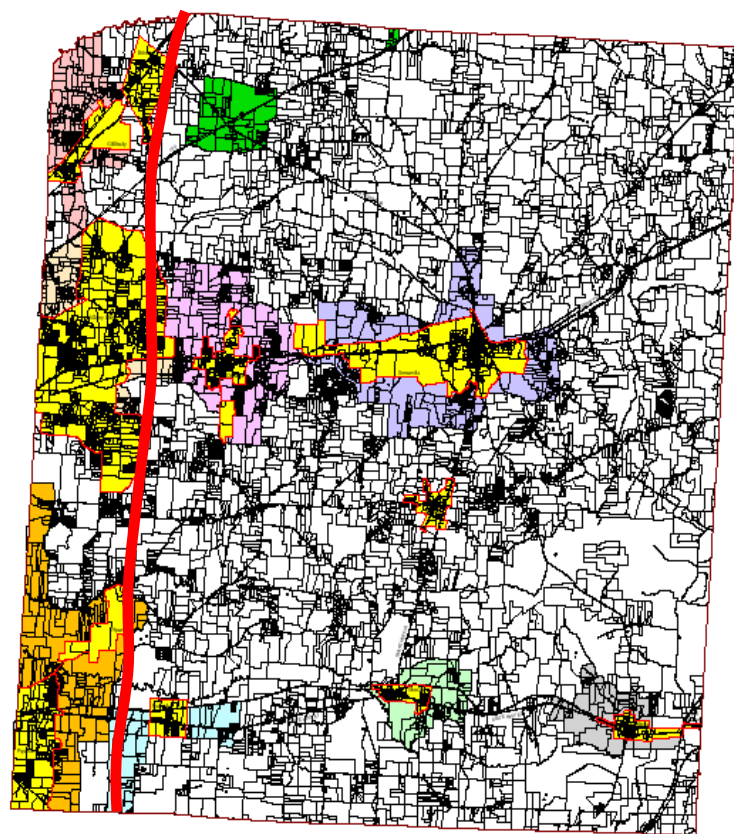
DeSoto County is in the final stages of developing and adopting a new comprehensive plan. The plan is a collection of goals, objectives and policies that relate to residential, commercial and industrial development as well as parks, open space and recreation. It focuses on the concept that an attractive community is one in which living areas, work areas, shopping and entertainment areas, community facilities and open spaces are all in close proximity to each other and are easily accessible. It calls for controlled development practices and dictates a number of regulations to ensure this occurs.

The DeSoto County plan contains demographic and socioeconomic data for the county obtained from the 2000 Census. This plan was the source of land use and demographic projections for the Mississippi portion of the MPO area for the 2026 LRTP.

The DeSoto County plan outlines a number of specific transportation goals and objectives. The plan calls for:

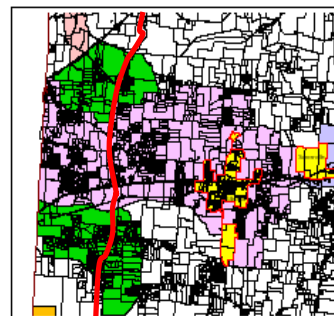
- Providing a network of roadways that allows for safe and efficient movement.
- Designing a comprehensive circulation system to integrate public facilities and land use.
- Providing better traffic flow by constructing new north-south and east-west routes.
- Reducing traffic congestion on major and minor streets and between homes and shopping and employment centers.
- Providing a roadway network capable of accommodating future needs as development occurs.
- Guiding the provision of access to particular types of development.

Figure 6
Fayette County Growth Plan



Alternative "A"

Fayette County Growth Plan
August 2003



Alternative "B"

*Alternative B is the adopted plan.

- Approximate MPO Boundary
- Fayette County
- Parcels
- Municipalities
- Gallaway Urban Growth Boundary
- La Grange Urban Growth Boundary
- Moscow Urban Growth Boundary
- Oakland Urban Growth Boundary
- Piperton Urban Growth Boundary
- Rossville Urban Growth Boundary
- Somerville Urban Growth Boundary
- Planned Growth Area
- Rural

4. *Gray's Creek Plan*

The Gray's Creek area is located in east-central Shelby County. It is a projected high growth area in the *Shelby County Growth Plan*. The *Gray's Creek Plan* includes a comprehensive policy for growth with strategies related to housing and commercial development, transportation, and other key issues. Currently the area is largely rural with two-lane roads. Sewer service is not available in the majority of the area.

This plan seeks to guide development in the area so as to preserve natural resources, extend services in an orderly manner, develop neighborhoods with fully connected street systems that encourage walking and communal spaces, and enhance the visual quality of the area's key corridors. It recommends mixed-density development, with higher densities where services currently exist, and stresses a balanced street network, which is adverse to the current trend of low-density developments seen in the county's fringe areas. The plan's more compact development can accommodate approximately the same number of residential units and the same amount of non-residential square footage as the current development pattern exhibited in adjacent areas of the County that are dominated by sprawling suburbanization.

5. *Memphis 2005 Plan*

Launched in the fall of 1996, the goal of the Memphis 2005 planning process was to enable the Memphis MSA to become "a world class community that outperforms peer MSAs in educational achievement, job growth, capital investment, per capita income, and quality of life." Transportation goals in this plan include:

- Achieve aggressive progress on the airport master plan.
- Expand freight terminal facilities at the Port of Memphis.
- Build river port facilities on the northern side of Downtown Memphis.
- Increase highway capacities to increase productivity for businesses and citizens.
- Develop a regional bus system to provide opportunities for people to move between home and work.
- Coordinate light-rail plans with the regional bus system.
- Support continued planning for highways and high-speed railways connecting Memphis-Birmingham- Atlanta and Memphis-Chicago-St. Louis-New Orleans.
- Promote greater use of the Main Street trolley.
- Build I-69.
- Upgrade I-55 on- and off-ramps and raise low overpasses for truck traffic.
- Rebuild the I-40 and I-240 East and Midtown interchanges.
- Connect Sam Cooper Boulevard with Downtown Memphis.

6. *Memphis Region Source Book*

In 1998, members of the Memphis 2005 Plan Advisory Committee recognized a need for a clear enunciation of a growth strategy to include outlying areas of Arkansas, Mississippi, and Tennessee within the Memphis region. In 2001, the Memphis 2005 committee adopted the *Memphis Region Source Book*. This document examines the region as a whole with Memphis as the anchor. It states that the “health of the entire region is dependent on the vitality of its metro core,” and it notes that the success of the central city is essential for the region’s success. Development patterns are discussed along with the unsustainable, costly nature of the area’s essentially unlimited low-density growth in the suburban areas of Shelby County.

The *Source Book* offers many recommendations relating to transportation including:

- Develop an integrated multi-modal “super hub” to strengthen Memphis’s function as a global logistics center.
- Develop a Regional Logistics Authority.
- Coordinate land use policies with transportation strategies to manage growth patterns.
- Create an integrated metropolitan transportation strategy, linking east and west sides of the Mississippi River.
- Strengthen and improve the Memphis MSA’s ties to the surrounding region.
- Build a third roadway/railway, seismically engineered, bridge across the Mississippi River.
- Develop regional consensus on a metropolitan surface transportation plan.

7. *Smart Growth Initiative*

In 2003, Shelby County Mayor A C Wharton, Jr. convened community leaders to help recommend policies and strategies for managing urban and suburban growth. This initiative suggests walkable communities with improved interconnectivity, mixed-use zoning districts, and encouraging compact development on the urban fringe. The first phase of this initiative was launched in April, 2003. Phase I transportation-related recommendations include:

- Amending the Major Road Plan of the Memphis MPO by identifying major roads within the inner core of Memphis that were laid out using an 80-foot-or-less right-of-way. This will enable more developer investment in urban properties by exempting some corridors from the current requirement for a minimum 84-foot right-of-way.
- Developing a local and coordinated street network plan that would reduce required lanes from six to four.
- Requiring a minimum of one north-south and one east-west collector street between major roads.
- Increasing the number of local neighborhood streets in the suburban fringe.
- Providing better/increased intersections at local streets and major roads.

- Implementing the local street model outlined in the Long Range Transportation Plan to serve as a prototype in developing unincorporated areas of the county.

8. Conclusion

When examined together, the plans reviewed for the 2026 LRTP offer a complete picture of the MPO area and its future direction. The City of Memphis is the anchor of the region. In order for the region to prosper, its core must grow in a healthy direction. The overriding theme that is evident after reviewing these plans together is that an alternative to the current uncontrolled, low-density, costly development pattern is needed. More compact development than what is currently in use in the majority of the county would consume less land and be more cost effective and energy conservative in terms of road and sewer infrastructure.

C. Proposed Growth Alternatives

The 2026 LRTP process considers two growth alternatives as viable scenarios for future development. They are:

- Suburban Expansion
- Light Rail Corridor Development

1. Suburban Expansion Alternative

The Suburban Expansion alternative reflects a continuation of current development trends, featuring a low-density urban setting through dispersed development without a light rail system in the region. Under this scenario, local governments would support new development with additional facilities and services using urban standards. Extensive and costly infrastructure improvements would accommodate suburban growth.

As is characteristic of recent development patterns, this alternative would continue the separation of land uses by type of use and housing values. Neighborhoods and subdivisions would be allowed to develop in response to market trends, expected to be predominantly single-family, suburban homes in subdivisions. Subdivisions would be developed with similar housing types and without road inter-connections, except as required for continuous arterial roads and safety concerns.

An extensive network of roads with adequate capacity would serve as the transportation system. Major arterials would provide the main travel routes throughout the metropolitan area and form the corridors of growth. The bus system would supplement this transportation system, including some improvements such as suburban transfer stations. However, new development could not be served efficiently with transit.

This alternative would establish greenbelts with minimal links to neighborhoods and major street crossings. The existing inner city neighborhoods would need support for sustainability

and/or rehabilitation. A plan for provision of innovative services, institutional and cultural developments in the inner city would also be a part of this alternative. The cities and counties would develop community and regional parks throughout the metropolitan area.

2. Light Rail Corridor Development Alternative

The Light Rail Corridor Development alternative assumes that all corridors in the MATA Regional Rail Program are completed by 2033. Intensive development would be supported in the urban core and along the corridor of a light rail transit (LRT) line. Higher densities would be promoted at designated locations that are adequately supported by transportation options and services. Increased development in the rail corridor would reduce the amount of land being consumed along the urban fringe. Better community design strategies would be applied to those areas that would not be impacted by the light rail lines.

The focus on redevelopment would be increased in the inner city under this alternative. Neighborhood redevelopment would be encouraged with infill development that is integrated into the neighborhood layout. The rail system would provide convenient access to services and employment centers. Neighborhoods within 1,500 feet of a station would be developed with a mix of residential, service and commercial activities. Residents and employees in these areas could walk easily between activities in the center.

The attractiveness of downtown Memphis as an employment center would be enhanced through improved access from the outer areas of development with an LRT system. The highest usage of available land in the Central Business Improvement District (CBID) would be pursued, and a variety of public and private uses would be accommodated.

The light rail system built in this alternative would be supported by a feeder bus system, park-and-ride locations and other transportation options as well as transit-oriented land uses. Reuse and development at higher densities in existing developed areas would help protect the environment, and increased use of transit to sustain good air quality would be promoted.

D. 2026 Projections for Growth Alternatives

1. Methodology

The first step in obtaining population and employment projections for the Memphis MPO involved developing a population estimate for 2026. The regional development model estimate of Woods and Poole served as a base figure that was further refined using data from the *Shelby County Growth Plan*, the *Fayette County Growth Plan* and the *DeSoto County Comprehensive Plan*. Employment projections were then calculated, consistent with this population estimate, using trend analysis of the growth/comprehensive plan data, the 2020 LRTP projections, Woods and Poole and employment estimates from the Memphis 2005 Plan, and the Bureau of Business and Economic Research at the University of Memphis. In order to obtain the growth projections allocated to each traffic analysis zone (TAZ) in the MPO, multiple meetings were held with each municipality in the MPO area. At these

meetings, available data was analyzed using maps that were prepared by the MPO staff from data provided by the Memphis and Shelby County Office of Planning and Development, the Shelby County Assessor of Property, *the DeSoto County Comprehensive Plan* and the Fayette County Growth Plan. The current land use, future land use plans, employment centers, building permit and census data were analyzed and allocated to each TAZ. The result was a population and employment projection for each TAZ in the MPO area for each development alternative. County totals were then derived by totaling TAZs for those areas.

Trend analysis of census data by census tract was the primary method for assigning population and employment data to the Suburban Expansion growth alternative TAZs. TAZ population and employment projections allocations for the Light Rail Corridor alternative were derived in a manner similar to the method of calculating the overall growth projections, through analysis of: census data; current land use; future land use plans; growth and comprehensive plans; location of employment centers; and other pertinent resources. For the time period before significant light rail related land use changes are expected, before the year 2016, projections were the same under both alternatives. In support of the methodology described here, a step by step summary of the resources utilized to obtain the population and employment projections for the two growth alternatives follows in **Appendix E-Growth Alternatives Projections Methodology**.

The 2026 LRTP projections for the recommended Light Rail Corridor Development alternative were presented to the Engineering and Technical Committee, the Regional Advisory Board and the Executive Board of the Memphis MPO. Following approval of the Light Rail Corridor Development as the selected alternative by these committees, the travel demand forecasting model was run to calculate travel demand.

2. Employment Projection

Employment is projected to increase from 560,087 in 2000 to 815,390 in the Memphis MPO region by 2026 under both growth alternatives. This represents an increase of 9,800 persons. It must be emphasized that this number does not represent the total number of employed persons residing within the region. Rather, it is employment within the region, regardless of place of residence. **Table 4, MPO Employment Data and 2026 Projections by County**, illustrates the breakdown of employment by county in the MPO area.

Table 4
2000 MPO Employment Data and 2026 Projections by County

| | 2000 | 2026 | % CHANGE |
|----------------|-------------|-------------|-----------------|
| Shelby | 511,528 | 725,142 | 41.8% |
| Fayette | 2,179 | 5,700 | 161.6% |
| DeSoto | 46,380 | 84,548 | 82.3% |
| TOTAL | 560,087 | 815,390 | 45.6% |

Source: Memphis MPO Projections

Employment growth shows the greatest percentage increase in Fayette County followed by DeSoto County. Following the population trends, Shelby County's share of the overall MPO employment base is estimated to decrease from 91% to 89%. DeSoto County will increase from over 8% to over 10% in its share of the MPO employment and Fayette County is estimated to experience an increase from .4% to .7% of the total MPO. These estimates served as the basis for analyzing the two growth alternatives, Light Rail Corridor Development and Suburban Expansion.

3. Growth Projection: *Light Rail Corridor Development Alternative 2026*

As described in the *Methodology* section of this chapter, traffic analysis zones (TAZs) were used in the analysis for the projections of the 2026 LRTP growth alternatives. **Appendix F, Demographic Projections of Light Rail Corridor Development Alternative by TAZ**, shows the 2000 values and 2026 projections of the Light Rail Corridor Development alternative for Population, Households, Workers, Vehicles, and Employment, for every Traffic Analysis Zone (TAZ) in the Memphis MPO, including the linear equations used to calculate the population and employment for intermediate years.

The base and forecast population, number of households, workers, and vehicles for the Light Rail Corridor Development Alternative for the Memphis MPO area are summarized in **Table 5, MPO 2000 Data with 2026 Light Rail Corridor Alternatives Projections**. The population projection for Year 2026 under this scenario is expected to be 1,323,397 for the MPO area comprising Shelby County and parts of Fayette and DeSoto Counties. This is an increase of 333,869 persons from the 2000 population of 989,528. It is projected that 61.6% of this increase, or 205,804 persons, will occur within Shelby County; 33%, or 109,013 persons, of the increase in DeSoto County; and 6%, or 19,052 persons, of the increase in Fayette County. Regular monitoring of local growth will allow the MPO to adjust these figures over time, and formal adjustment will occur as the transportation plan is updated every three years.

Table 5
MPO 2000 Data with 2026 Light Rail Corridor Alternative Projections

| | 2000 | Light Rail 2026 | % CHANGE |
|-------------------|-------------|----------------------------|---------------------|
| Population | 989,528 | 1,323,397 | 33.7% |
| Households | 381,761 | 508,399 | 33.2% |
| Vehicles | 593,795 | 850,660 | 43.3% |
| Workers | 658,257 | 855,774 | 30.0% |

Source: Memphis MPO Projections

4. Growth Projection: *Suburban Expansion Alternative 2026*

Projections using TAZs for the Suburban Expansion alternative are listed in **Appendix G, Projections of Suburban Expansion Alternative by TAZ. Table 6, 2000 Data and 2026**

Suburban Expansion Alternative Projections, illustrates that for the Suburban Expansion alternative, a projection of 1,302,869 people in the year 2026 for the MPO area. This is an increase of 313,341 persons from the 2000 Census population of 989,528. It is projected that 58% of this increase, or 181,162 persons, will occur within Shelby County by 2026; 36%, or 181,162 persons, of the increase in DeSoto County; and 6%, or 20,168 persons, of the increase in Fayette County. The projected population of the Suburban Expansion alternative increases by 32% from 2000 to 2026.

Table 6
MPO 2000 Data and 2026 Suburban Expansion Alternative Projections

| | 2000 | Suburban Expansion 2026 | % CHANGE |
|-------------------|-------------|----------------------------------------|---------------------|
| Population | 989,528 | 1,302,869 | 31.7% |
| Households | 381,761 | 499,712 | 30.9% |
| Vehicles | 593,795 | 844,828 | 42.3% |
| Workers | 658,257 | 845,609 | 28.5% |

Source: Memphis MPO Projections

5. Comparison of Growth Alternatives

Total population within the MPO boundaries is expected to be less under the Suburban Expansion alternative than the Light Rail Corridor Development alternative due to people moving out, creating more dispersed development. The Light Rail Corridor Development alternative, with its compact design, is anticipated to capture more of the future population growth.

The difference in population and therefore households, vehicles and workers, is shown in **Table 7, MPO 2000 Data with 2026 Projections Comparison**.

Table 7
MPO 2000 Data with 2026 Projections Comparison

| | 2000 | Light Rail 2026 | Suburban Expansion 2026 | Difference |
|-------------------|-------------|----------------------------|----------------------------------------|-------------------|
| Population | 989,528 | 1,323,397 | 1,302,869 | 20,528 |
| Households | 381,761 | 508,399 | 499,712 | 8,687 |
| Vehicles | 593,795 | 850,660 | 844,828 | 5,832 |
| Workers | 658,257 | 855,774 | 845,609 | 10,165 |

Source: Memphis MPO Projections

The 20,528 people distributed outside of the MPO boundary for the Suburban Expansion alternative increased the number of external trips forecasted in the Travel Demand Forecasting (TDF) model. The spatial distribution of the changes in the two alternatives shown in **Figure 7, Variation in 2026 LRTP Growth Alternative**, illustrates the dispersion of population beyond Shelby County and into DeSoto County and Fayette County.

In summary, Shelby County is expected to lose population under the Suburban Expansion alternative while DeSoto and Fayette counties will increase in population. **Figure 7** above shows the following differences comparing the Light Rail Corridor Development Alternative to the Suburban Expansion alternative:

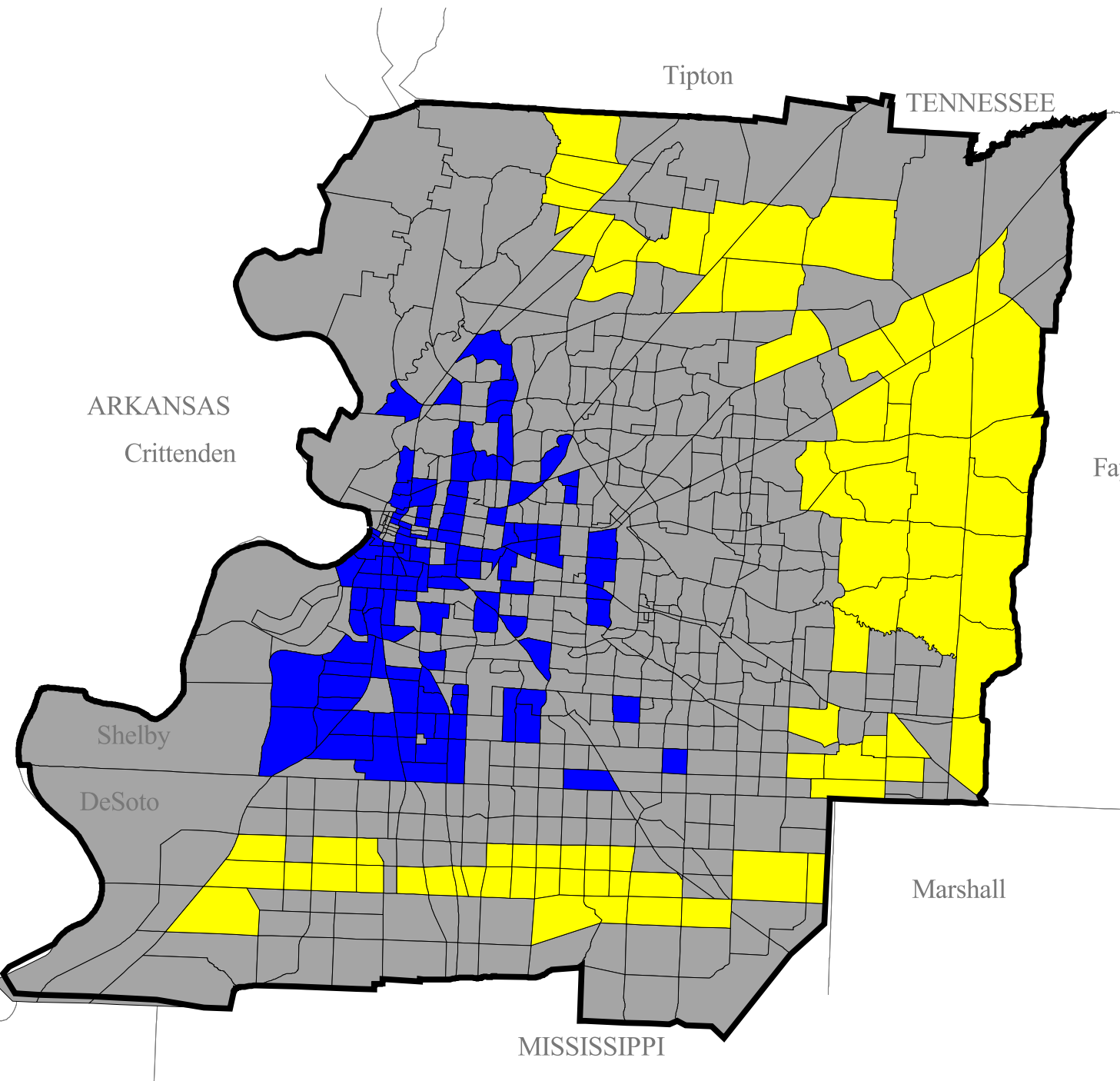
- Shelby County total 2026 population is projected to be 24,642 less than LR.
- DeSoto County total 2026 population is projected to be 2,998 more than LR.
- Fayette County total 2026 population is projected to be 1,116 more than LR.
- 2026 population outside of the current MPO boundary is projected to increase by 20,528.

The location of major employment/activity centers contributes to where people choose to live. The MPO region has experienced tremendous economic growth over the past 10 years. Continued aggressive policies to attract and retain business and industry by the local jurisdictions will help ensure that the economy continues to thrive.

With the implementation of the Light Rail Corridor Development alternative, employment centers will continue to grow, moving outward along the light rail lines. Additional employment will be concentrated in the east central sector of Shelby County and the western reaches of Fayette County. **Figures 29 and 30** in the Major Roads section show the 2026 major road network overlaid on the projected population and employment for the horizon year. Current planned employment areas that support the Light Rail Corridor Development alternative include: the Southeast Industrial Corridor, planned to attract major new industry just south of the current City limits; the Technology Corridor which extends eastward from the Memphis in the area generally served by Bill Morris Parkway through Germantown to Collierville; the redevelopment and reuse of the Millington Naval Air Station; the Memphis Intermodal Terminal at Pidgeon Industrial Park and the job attraction strategies of the DeSoto Economic Development Council concentrated in Olive Branch and Southaven, MS.

The differences in the two land development alternatives are not extreme differences in terms of population, households, vehicles and workers. Part of the reason for this is that until 2016, the trends in both alternatives are identical. The changes occur between 2016 and 2026 when the light rail system would be constructed. As described in the *Shelby County Growth Plan*, the urbanization of Shelby County will continue in the future due to adopted policies that call for the extension of sewer lines and major roads. Given the small difference in demographic projections between the two alternatives, these urbanized growth patterns can be supported under both the Light Rail Corridor Development alternative and the Suburban Expansion alternative.

Figure 7
Variation in 2026 LRTP Growth Alternatives



□ Traffic Analysis Zone (TAZ) Boundaries
■ Reduction in SE* as compared to 2026 LR**
■ Increase in SE as Compared to 2026 LR

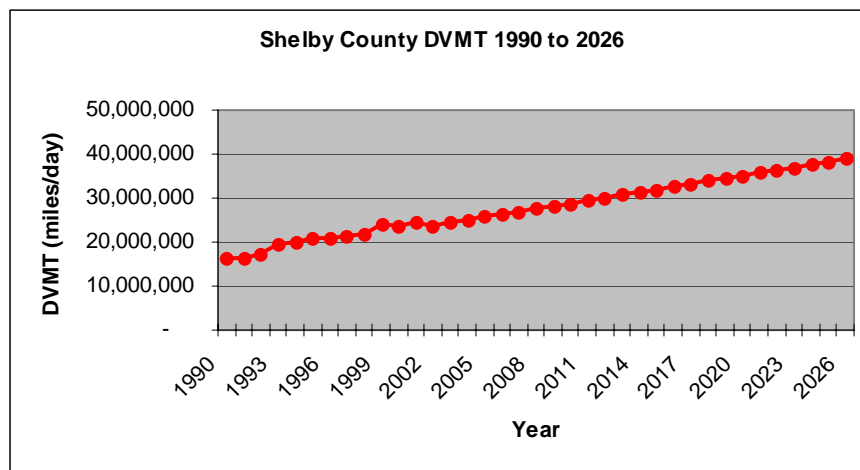
* 2026 Suburban Expansion Alternative Population Projections
** 2026 Light Rail Corridor Development Alternative Population Projections

6. Travel Demand

Employment growth is a major factor in the increase of annual vehicle miles traveled (VMT) in the Memphis MPO region. Additionally, much of the recent residential development has occurred in the outlying areas. As a result, trip lengths for all trip purposes have increased. The Tennessee Department of Transportation (TDOT) provides Daily VMT (DVMT) estimates using actual vehicle counts on roadway locations throughout Shelby County.

Estimates of DVMT on roadways in Shelby County were estimated for 2026 using 1990 to 2002 trends. The average annual increase from 1990 to 2002 was 630,232 miles per day. **Figure 8, Shelby County DVMT 1990-2026**, shows the annual growth from 16 million miles (MM) in 1990, to 24 MM in 2002, and to an estimated 39 MM in 2026.

Figure 8: Shelby County DVMT 1990-2026



Source: Memphis MPO

The 2026 Shelby County DVMT value follows the same upward trend as the Travel Demand Forecasting Model for the two growth alternatives. The travel demand model was run with the population and employment growth projections for both the Light Rail Corridor Development and Suburban Expansion alternatives. The model projects DVMT for the MPO region to continue increasing to over 34 MM under both alternatives (trend 34,742,262, rail 34,861,941). The lower number for Suburban Expansion further illustrates how the population is moving beyond the Memphis MPO boundaries creating travel demand in adjacent counties. The higher number for the Light Rail Corridor alternative demonstrates a higher travel demand for a larger population than in the Suburban Expansion alternative. As in the case of the demographic projections, travel demand differences are not great between the two alternatives. Both alternatives show an increase in travel demand in 2026 and both alternatives would require the resolution of congestion management issues, as described in **Chapter 6**.

E. Selected Growth Alternative: Light Rail Corridor Development

In 1989, MATA produced its first *Long Range Transit Plan* which included a light rail/busway recommendation for the Poplar Avenue Corridor. In 1990, the *Memphis Commuter Rail Study* was completed and involved a comprehensive analysis of commuter rail scenarios in the Poplar and Cordova Corridors. The study reaffirmed the basic suitability of the Poplar Corridor for a major fixed-guideway transit investment in the future. In 1993, the Mayor of Memphis appointed a task force to study the feasibility of light rail for the Memphis area. The Task Force concluded that a light rail system is a viable concept to help meet the needs of the Memphis metropolitan area. The *Report of the Light Rail Task Force* cited the fact that light rail would serve as a catalyst for economic development through the creation of jobs, as well as serving as a land use planning and management tool. It would link neighborhoods, parks, employment centers, schools and churches.

In 1997, the Memphis Area Transit Authority developed the *Regional Transit Plan* (RTP) in cooperation with the MPO and the Division of Planning and Development. The development of the plan included regular review meetings with the MPO Engineering/Technical Committee so that plan elements were coordinated and so that there was adequate public review. The planning area boundaries for the Transit Plan are the same as the boundaries of the MPO.

The RTP initially considered 7 fixed guideway transit corridors for the metropolitan area. The corridors were evaluated and ranked based on transit ridership, market, cost and other policy issues. The corridors were further evaluated and based on factors such as cost, land use/demographic patterns, potential for economic development and particularly ridership, three corridors were selected: East Memphis/Germantown/Collierville (East/Southeast in 2026 LRTP), Whitehaven/Mississippi (Southern in 2026 LRTP) and Frayser/Millington (Northern in 2026 LRTP). The East/Southeast and Southern routes were the most feasible based on Federal Transit Administration's key measurement of ridership potential and were recommended to be developed first. The Northern route exhibited lower ridership potential, but ranked high in land use development potential and therefore it was recommended that this route be developed after the initial two.

The recommendations of the 1997 RTP were reviewed extensively by the ETC and compared to two other land use alternatives – Expanding Suburbs and Neighborhood Renewal. The ETC recommended that the Light Rail Alternative be adopted by the MPO as the preferred land use alternative in the 2020 LRTP. **The 1997 RTP was adopted by the MPO Executive Board in 1998 and incorporated into the 2020 LRTP and all subsequent LRTPs and their associated updates.** With each update of the LRTP, the light rail alternative has been re-examined and compared to alternative development patterns. The Light Rail Corridor Development alternative has remained the most viable alternative for the Memphis MPO region based on the mobility options that it offers area residents, its potential to spur jobs and economic development and its inherent land development principles which help to guide investment into developed areas of the region. **The Light Rail Corridor**

Development Alternative remains as the preferred land use alternative in the 2026 LRTP.

The Light Rail Corridor Development alternative provides infrastructure that promotes an urban development pattern which is supported by the *Shelby County Growth Plan*, *DeSoto Comprehensive Plan*, *Fayette County Growth Plan*, *Gray's Creek Plan*, *Memphis Region Source Book*, and *Smart Growth Initiative*. Strategies in these plans complement this alternative and help make it the most viable alternative. These goals are supported by all of the plans that contributed to the 2026 LRTP. However, it should be noted that the 2026 LRTP and the adopted policies of the MPO serve only as a guide for development by the local jurisdictions of the MPO region. Legislated policies and programs to enact the LRTP's strategies for development are enacted at the discretion of the local jurisdictions.

Transportation provides opportunities for social, economic, and community activities and policy makers have turned to the transportation sector as a means of achieving a variety of societal goals. Growth plans, comprehensive plans and regional policies concur that the development and improvement of the metro core is essential to the welfare of the Memphis MPO region.

Past and current trends in the MPO region have been those of rapidly expanding low-density suburbanization. The growth plans of Shelby and Fayette Counties, the *Gray's Creek Plan*, the *Memphis Region Sourcebook*, and the *Smart Growth Initiative* all seek to reverse the trend of low-density, sprawling developments. Multiple subdivision development without acceptable roadway interconnections is forcing more traffic onto major arterials, another trend that is unacceptable to the plans of the region. Finally, this type of growth scenario may continue to degrade the air quality and congestion mitigation of the area, which is of major concern.

Conclusion

The first extension of this light rail system is in the final stages of construction. Other line extensions are still in the planning stages with final corridor selection for the southeast extension expected in 2004. MATA through its RTP and Regional Rail Program has committed to designing and constructing the light rail system. Local sources of funding have been identified and MATA, along with the City of Memphis, will continue to seek legislation that specifically sets aside funding for mass transit in the MPO area from State government. The MPO has identified funding sources and has included projects in this plan that support the development of the light rail system. Among other supportive projects, transit centers, transit enhancements, the light rail medical center extension and the regional rail program are all included in this plan as well as in the current TIP.

In the MPO region traditional suburban development building patterns have dictated the transportation network. With the creation and promotion of a light rail transportation system, land use and development patterns will begin to change as they centralize around this new mode of transportation. The MPO will monitor adopted plans of member jurisdictions so that the transportation network can respond any newly designated major employment/activity centers. Additionally, the MPO will encourage local jurisdictions to adopt policies and programs which support the goals of the Light Rail Corridor Development Alternative.

L RTP 2026 Projects/Strategies

All of the projects in the L RTP 2026 support the Light Rail Corridor Development Alternative.

SUPPORT OF L RTP 2026 GOALS

While supporting all of the goals of the L RTP 2026, selection of the Light Rail Corridor Development land use alternative specifically addresses the following goals and objectives:

- **Increase accessibility and mobility for people using the MPO's regional transportation network**
 - Continue to explore the use of existing rail lines for transit service
 - Improve transit services to meet additional needs and demands
 - Continue to support efforts to secure a permanent and sustainable source of local funding for mass transit
- **Promote efficient land use and development patterns to ensure safety, economic vitality and to meet existing and future transportation needs**
 - Promote the concentration of future employment and other activity centers along existing and planned major travel corridors
 - Promote infill development that reuses existing resources such as buildings, utilities and roads

- **Encourage conservation of energy resources in addition to minimizing adverse impacts transportation has on social, economic and environmental attributes of the community**
 - **Promote the selection and use of efficient transportation devices**
- **Develop a cost effective planning process that maximizes community consensus in all aspects of transportation planning**
 - **Support achievement of community consensus on transportation goals**
- **Increase the safety and security of the transportation system for motorized and non-motorized users**
 - **Encourage policies, plans and transportation projects that eliminate unsafe designs and conditions or provide projects that increase safety for users**
- **Continue to develop a multi-modal transportation network that utilizes strategies for addressing congestion management and air quality issues in the MPO region**
 - **Continue to implement and promote strategies and policies such as access control, HOV facilities, travel demand management, mass transit & alternative transportation to improve congestion conditions**